

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently amended) A heat-emitting burner element for use with at least one processing device of a fuel shell system performing an endothermic process, comprising: at least two metal plates arranged essentially parallel to each other and at a distance from each other, and wherein the plates form a reaction gap there between and, each one of the plates having a surface facing the reaction gap, the surface facing the reaction gap of at least one of the plates and facing the reaction gap having a catalytic coating thereon, constructed and arranged to, as a result of a catalytic combustion of a fuel gas/oxygen mixture on the surface having a catalyst thereon, generate heat and emit the heat by radiation, convection and conduction directly through ~~coated~~ plate(s) at least one of the plates to at least one neighboring endothermic stage and ~~that~~ at least one of the plates comprises structural elements being ~~covered~~ coated with a catalyst coating and the structural elements extending into the reaction gap and wherein the height of each of the structural elements is less than the reaction gap.

2. (Previously presented) A burner element as in claim 1 wherein at least one of the structural elements comprises a four-sided element and wherein the reaction gap provides an inlet and an outlet on the first and second opposite sides of the four-sided elements so that the

fuel gas/oxygen mixture flows in a flow direction from the inlet of the first side to the outlet of the second side.

3. (Currently amended) A burner element as in claim 1 wherein the plates forming the reaction gap are of wavelike shape, ~~with the~~ each plate having peaks and valleys forming a longitudinal direction of the ~~waveform~~ wavelike shape extending in the flow direction of a fuel ~~gases~~ gas.

4. (Previously presented) A burner element as in claim 3 wherein the ~~waveform is~~ wavelike shape includes a rectangular or square wave.

5. (Previously presented) A burner element as in claim 2 wherein a device for introducing diluting air transversely to the direction of flow is provided at least in one place along at least one of the oppositely positioned third and fourth sides of the element.

6. (Previously presented) A burner as set forth in claim 5 wherein the device is designed for introducing diluting air in order to introduce the air perpendicular to the flow direction of the fuel gas/oxygen mixture through the reaction gap.

7. (Previously presented) A burner element as in claim 5 further comprising: a catalytic combustion chamber defined by the reaction gap, and wherein the catalytic combustion chamber is subdivided in the flow direction into several structural sections with the device for introducing

diluting air having openings which in each case are arranged between neighboring sections following one another.

8. (Previously presented) A burner element as in claim 7 wherein a distance is provided between two neighboring consecutive sections in the region of the air openings which is at least essentially free of structural elements.

9. (Canceled)

10. (Currently amended) A burner element as in claim 7 wherein between the two plates on their edge regions, spacers are provided and wherein the air openings are provided at locations including ~~at least one of in the spacers~~ at least one of: in the spacers; and between the spacers.

11. (Previously presented) A burner element as in claim 1 wherein two plates form on respective surfaces facing away from each other a part of an endothermic stage.

12. (Currently amended) A burner element as in claim 11 ~~wherein the surfaces of the plates facing away from each other are also structured and further comprising with a catalyst coated on the surfaces~~ of the plates facing away from each other.

13. (Previously presented) A burner element as in claim 2 wherein the inlet communicates with a feed channel of the fuel/oxygen mixture arranged in an edge region on the first side of the element and extending perpendicular to the reaction gap.

14. (Currently amended) A burner element as in claim 13 wherein a plurality of structural elements comprises at least one of: a thin shaped structure, a bar shaped structure, and a U-shaped structure.

15. (Currently amended) A burner element as set forth in claim 2 wherein the inlet communicates with several feed-in passages which guide the fuel/oxygen mixture to different places in the ~~reactor~~ reaction gap along the first side and thus assure a uniform distribution of the fuel/oxygen mixture over the width of the ~~reactor~~ reaction gap.

16. (Currently amended) A burner element as set forth in claim 15 wherein the outlet communicates with several collecting passages which collect the exhaust gases from the reactor or the reaction gap at various places along the second side and feed the exhaust gases to the outflow channel.

17. (Previously presented) A burner element as in claim 15 wherein the feed-in passages and the collecting passages are rectangular and are aligned side by side so that the distance in each case between a mouth of one of the feed-in passages and the inlet to the collecting passages lying opposite thereof is always the same.

18. (Previously presented) A burner element as in claim 1 wherein a plurality of the structural elements comprises a thin shaped structure.

19. (Previously presented) A burner element as in claim 1 wherein a plurality of the structural elements comprises a U-shaped structure.

Claims 20-31 (Canceled).